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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,615	10/18/2005	Michael Dettmers	SHEE 200058	1978
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CLEVELAND, OH 44114				
EXAMINER				
PRICE, CRAIG JAMES				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/553,615

Applicant(s)

DETTMERS, MICHAEL

Examiner

CRAIG PRICE

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-85/86)
- Paper No(s)/Mail Date 10/18/2005
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “plastic” (claim 16, see cross hatching, MPEP 608.02, reference chart), “the distribution valve are clamped in a force fit manner by means of a screw fixing in the valve housing” (claim 17), and the throttling clearance, **must be shown or the feature(s) canceled from the claim(s)**.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “20” has been used to designate both retaining ring and the sealing ring.
3. No new matter should be entered.
4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. **Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d).** If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The abstract of the disclosure is objected to because the numerical indicators should be enclosed in parenthesis. Correction is required. See MPEP § 608.01(b).

Claim Objections

6. Claim 1 objected to because of the following informalities: Line 1, the word "Hydraulical" is incorrectly spelled. Appropriate correction is required.

Claim 16 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim *cannot depend from any other multiple dependent claim*. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits. However, the Wolfgang et al. '741 reference discloses the material attributes. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim limitation in claim 2, line 2, "the valve piston is guided between..." is unclear as to how the piston is guided. This would appear that the piston is located between both radial apertures. The claim limitation in claim 4, line 6 and 7, "the throttling clearance, if the control piston is positioned in the intermediate position, with contact..." is unclear as to what is being claimed relative to the throttling clearance? Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-6, 8-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobow et al. (DE19708741A1) in view of Frantz (2,705,020).

Kobow et al. disclose a hydraulically switchable distribution valve in particular for shield supports in underground mining, with, a high pressure port (P), a load port (A), a return port (T), and a control pressure port (St,26) for hydraulic fluid. A valve piston (9), axially displaceable in a location hole of a valve seat mounting, which at its open end face is connected to the load port, which comprises a radial aperture (23) and which when in contact with a sealing seat (12) on the valve seat mounting side blocks off the load port from the high pressure port. A control piston (16) in a control piston guide, which can be displaced by means of a force exerted by a control pressure at the control pressure port, by means of which the return port, as a function of the position of the control piston, can be connected with the load port or can be blocked off from the load port and the high pressure port, and that the first radial aperture can be closed by the control piston with the arrival of the control piston at an intermediate position between an initial position and an end position, and wherein throttling clearance, if the control piston is positioned in the intermediate position, with contact between the valve piston

with the sealing seat, forms a restricted fluid connection between the load port and the return port, and with an opened sealing seat forms a restricted fluid connection between the high pressure port and the return port. The load port in the initial position of the control piston is connected with the return port via the first radial aperture, and in that the control piston in its end position closes off the return port, as shown in the figure.

Regarding claim 6, the control piston is free to move relative to the valve piston from its initial position up to its intermediate position, and travels from the intermediate position to the end position coupled with the valve piston.

Regarding claim 8, the valve piston is fitted with a valve cone (10) and that a sealing ring with a cone surface provided for the sealing seat is located on the valve seat mounting.

Regarding claim 9, the sealing ring (13) is fixed in the valve seat mounting by means of a retention ring (11) and wherein the retention ring with its interior wall surface forms the valve piston sliding guide.

Regarding claims 10 and 11, the valve piston on its outer wall surface comprises a cone face ring, on the bottom surface of which is provided the valve cone, the cone face ring being located on the high pressure side.

Regarding claim 12, the control piston comprises a control piston shaft (27) that in the intermediate and end positions of the control piston overlaps the first radial aperture so as to sealedly overlap it or overlap the latter while leaving a throttle clearance.

Regarding claim 13, a sealing seat element (18) is located in the valve seat mounting on which, in the end position of the control piston, a forward end of the control piston shaft comes into sealing contact.

Regarding claim 14, the retention ring and the sealing seat element are formed in one piece and/or that the valve seat mounting comprises a stepped location section in which the sealing ring and the retention ring are clamped in a form fit manner, as shown in the figure.

Regarding claim 15, the retention ring surrounds the sealing ring on the side facing away from the piston sealing face with an inward chamfered ring mounting in a form fit manner as shown in the figure.

Regarding claim 17, the individual components of the distribution valve are clamped in a force fit manner by means of a screw fixing (7) in the valve housing, which screw fixing closes off the location hole toward the outside.

Regarding claim 18, a closing spring (28) is located in the valve seat mounting acts together with the valve piston such that the valve cone is clamped against the sealing ring.

Regarding claim 19, the first radial aperture is configured as a radial hole and the radial apertures consist of a number of radial holes, preferably four, located around the circumference and spaced apart from each other.

Regarding claim 21, the valve piston comprises on its closed face opposite to the open end face a connecting thread (the internal thread shown in schematic form near lead line 16) for connection of a disassembly tool.

Kobow et al. is silent to having a second radial aperture, wherein the valve piston comprises a second radial aperture, displaced towards the end face relative to the first radial aperture, and wherein the valve piston is guided between both radial apertures in a valve piston sliding guide with the formation of a throttling clearance, and where the second radial aperture completely unblocks the fluid connection between the high pressure port and the load port and the cone face ring being located on the high pressure side of the second radial aperture and the second radial aperture are configured as a radial hole and the radial apertures consist of a number of radial holes, preferably four, located around the circumference and spaced apart from each other and wherein the second radial aperture, as a function of the location of the valve piston, lies opposite to the valve piston sliding guide or lies on the high pressure side of the valve piston sliding guide.

Frantz discloses a hydraulically actuated control valve which teaches the use of a second aperture (16) in the valve piston.

It would have been obvious to one of ordinary skill in the art at the time of invention to employ the second radial apertures of Frantz into the valve of Kobow et al. to have the valve piston comprises a second radial aperture, displaced towards the end face relative to the first radial aperture, and wherein the valve piston is guided between both radial apertures in a valve piston sliding guide with the formation of a throttling clearance, and where the second radial aperture completely unblocks the fluid connection between the high pressure port and the load port and the cone face ring being located on the high pressure side of the second radial aperture and the second

radial aperture are configured as a radial hole and the radial apertures consist of a number of radial holes, preferably four, located around the circumference and spaced apart from each other, and wherein the second radial aperture, as a function of the location of the valve piston, lies opposite to the valve piston sliding guide or lies on the high pressure side of the valve piston sliding guide in order to provide a conduit between the outlet line and the upper chamber through which any air in the outlet line is bled quickly (Col.3, Lns. 24-30).

10. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobow et al. (DE19708741A1) and Frantz (2,705,020) and further in view of Dettmers (DE 10047073 C1).

Kobow et al. and Frantz are silent in having the control piston at its end face facing the control pressure port comprises an inward-facing flange, which in the intermediate position of the control piston comes into contact with a shoulder section of the valve piston, and that the valve piston is axially secured in the valve seat mounting with a snap ring.

Dettmers discloses a similar valve type which teaches the flange (below leader line 32) and the snap ring (45).

It would have been obvious to one of ordinary skill in the art at time of invention to employ the flange of Dettmers onto the valve of Kobow et al. and Frantz in order to create an abutment surface to the piston to ensure movement of the piston during the control pressure cycle.

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It would have been obvious to one of ordinary skill in the art at the time of invention to employ the snap ring of Dettmers onto the valve of Kobow et al. and Frantz in order to extract the valve as a unit when disassembling.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reinelt et al. (6,837,269), Reinelt et al. (6,609,539), Watson (5,901,749), Peters et al. (5,427,142), Weirich et al. (5,157,947) and Kussel et al. (4,702,148) all disclose similar valves.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CRAIG PRICE whose telephone number is (571)272-2712. The examiner can normally be reached on 7AM - 5:30PM Mon-Thurs, Increased flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CP

5 February 2008

/C. P./

Examiner, Art Unit 3753

/John Rivell/

Primary Examiner, Art Unit 3753